LISTING OF THE CLAIMS

This listing of claims is presented as a courtesy to the Examiner.

1. (Previously Presented) An oil pump rotor assembly comprising:

an inner rotor having "n" external teeth ("n" is a natural number); and

an outer rotor having (n+1) internal teeth which are engageable with the external teeth,

wherein the oil pump rotor assembly is used in an oil pump which, during rotation of the

inner and outer rotors, draws and discharges fluid by volume change of cells formed between the

external teeth of the inner rotor and the internal teeth of the outer rotor engaging therewith,

wherein the volumes of the cells increase along a rotational direction of the inner rotor and

the outer rotor,

wherein clearances defined between the external teeth and the internal teeth engaging

therewith also increase along the rotational direction,

wherein when the clearances are defined such that: one of the clearances that corresponds to

the cells having the minimum volume is designated as "a"; another clearance that corresponds to the

cell having the maximum volume is designated as "c"; and the other clearances that correspond to

the cell whose volume is increasing during rotation of the inner rotor and the outer rotor and are

arranged between the clearance "a" and the clearance "c" are designated as "b", the following

inequalities are satisfied:

2

$$a \le b \le c$$
, and $a < c$, and

wherein when the clearance "b" of the cell positioned backward as viewed in the direction of rotation is further designated as "b1", and the clearance "b" in the cell positioned forward as viewed in the direction of rotation is further designated as "b2", the following inequality is satisfied:

 $b1 \leq b2$.

2. (Previously Presented) An oil pump rotor assembly according to claim 1,

wherein the volumes of the cells decrease along the rotational direction of the inner rotor and the outer rotor such that the clearances also decrease along the rotational direction, and

wherein when the clearance that corresponds to the cell whose volume is decreasing during rotation of the inner and outer rotors is designated as "d", the following inequalities are satisfied:

$$a \le b \le c$$
, $a < c$, and $a \le d \le c$, and

wherein when the clearance "d" in the cell positioned backward as viewed in the direction of rotation is further designated as "d1", and the clearance "d" in the cell positioned forward as viewed in the direction of rotation is further designated as "d2", the following inequality is satisfied:

 $d1 \ge d2$.

3. (Previously Presented) An oil pump rotor assembly comprising: an inner rotor having "n" external teeth ("n" is a natural number); and an outer rotor having (n+1) internal teeth which are engageable with the external teeth,

Application No. 10/532,742 Docket No.: 09852/0202846-US0

Amendment dated July 18, 2008

Response to Final Office Action dated April 22, 2008

wherein the oil pump rotor assembly is used in an oil pump which, during rotation of the

inner and outer rotors, draws and discharges fluid by volume change of cells formed between the

external teeth of the inner rotor and the internal teeth of the outer rotor engaging therewith,

wherein the volumes of the cells increase and decrease along a rotational direction of the

inner rotor and the outer rotor, and

wherein a clearance defined between the external teeth and the internal teeth engaging

therewith gradually increases as the cell rotationally moves from a position at which the volume of

the cell is minimized to a position at which the volume of the cell is maximized.

4. (Previously Presented) An oil pump rotor assembly according to claim 3, wherein the

clearance gradually decreases as the cell rotationally moves from a position at which the volume of

the cell is maximized to a position at which the volume of the cell is minimized.

5. (Previously Presented) An oil pump rotor assembly according to Claim 1, wherein:

tooth surfaces of the inner and outer rotors are respectively formed using cycloid curves

which are formed by rolling respective rolling circles along respective base circles without slip:

each tooth profile of the inner rotor is formed such that a tip profile thereof is formed using

an epicycloid curve which is formed by rolling a first circumscribed-rolling circle Ai along a base

circle Di without slip, and the tooth space profile thereof is formed using a hypocycloid curve which

is formed by rolling a first inscribed-rolling circle Bi along the base circle Di without slip; and

4

Docket No.: 09852/0202846-US0

Application No. 10/532,742 Amendment dated July 18, 2008 Response to Final Office Action dated April 22, 2008

each tooth profile of the outer rotor is formed such that a tip profile thereof is formed using an epicycloid curve which is formed by rolling a second circumscribed-rolling circle Ao along a

base circle Do without slip, and the tip profile thereof is formed using a hypocycloid curve which is

formed by rolling a second inscribed-rolling circle Bo along the base circle Do without slip.

6. (Previously Presented) An oil pump rotor assembly according to Claim 1, wherein

tooth surfaces of the inner rotor are formed using a trochoid envelope curve which is formed by

moving a trajectory circle, whose center is positioned on a trochoid curve, along the trochoid curve,

and the tooth tips of the outer rotor are formed using an arc having the same radius as that of the

trajectory circle.

7. (Cancelled)

8. (Previously Presented) An oil pump rotor assembly according to Claim 1,

wherein each tooth profile of the inner rotor is formed such that a tip profile thereof is

formed using an epicycloid curve which is formed by rolling a first circumscribed-rolling circle Di

along a base circle "bi" without slip, and a tooth space profile thereof is formed using a hypocycloid

curve which is formed by rolling a first inscribed-rolling circle "di" along the base circle "bi"

without slip, and each tooth profile of the outer rotor is formed such that a tip profile thereof is

formed using an epicycloid curve which is formed by rolling a second circumscribed-rolling circle

5

Docket No.: 09852/0202846-US0

Application No. 10/532,742 Amendment dated July 18, 2008 Response to Final Office Action dated April 22, 2008

circle "bo" without slip, and

Do along a base circle "bo" without slip, and a tooth space profile thereof is formed using a hypocycloid curve which is formed by rolling a second inscribed-rolling circle "do" along the base

wherein the inner rotor and the outer rotor are formed such that the following equations and inequalities are satisfied:

```
Φbi=n·(ΦDi+Φdi);

Φbo=(n+1)·(ΦDo+Φdo);

one of ΦDi+Φdi=2e and ΦDo+Φdo=2e;

ΦDo > ΦDi;

Φdi > Φdo; and

(ΦDi+Φdi) < (ΦDo+Φdo),
```

where Φbi is a diameter of the base circle "bi" of the inner rotor, ΦDi is a diameter of the first circumscribed-rolling circle Di, Φdi is a diameter of the first inscribed-rolling circle "di", Φbo is a diameter of the base circle "bo" of the outer rotor, ΦDo is a diameter of the second circumscribed-rolling circle Do, Φdo is a diameter of the second inscribed-rolling circle "do", and "e" is an eccentricity distance between the inner and outer rotors.

9. (Previously Presented) The oil pump rotor assembly according to Claim 1, wherein the value "a" is in the following range:

```
0.010 \text{ mm} \le a \le 0.040 \text{ mm}.
```

Docket No.: 09852/0202846-US0

Application No. 10/532,742 Amendment dated July 18, 2008 Response to Final Office Action dated April 22, 2008

10. (Previously Presented) The oil pump rotor assembly according to Claim 9, wherein the value "c" is in the following range:

 $0.040 \text{ mm} \le c \le 0.150 \text{ mm}.$